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Introduction

Geographers are well-positioned to identify the spaces and places where societal responses to climate change are becoming evident. Carbon markets have so far been the main international policy response to mitigate climate change; a large-scale policy experiment (see Tietenberg 2008), that is still new and evolving. Indeed, Phase One (2005-2007) of the European Emissions Trading Scheme (EU ETS) was deliberately set up as a 'learning by doing' period. The repercussions of carbon markets are therefore still being worked out, and there have been a number of unexpected outcomes (concerns about trading fraud, large price crashes, dominance of certain industrial projects etc.) (see House of Commons 2012). Carbon markets have been an exciting and growing topic of research for lots of geographers (see for example Bumpus and Liverman 2008; Bridge 2010; Boyd, Boykoff et al. 2011). To date most carbon market research by geographers has been about *places*, i.e. assessing carbon market projects in particular locations (see for example Boyd, Hultman et al. 2009; Lansing 2011), or examining the functioning of particular regional carbon markets (such as in Europe see Bailey and Maresh 2009). But there is also the potential for geographers to examine how carbon markets are manifesting within particular *spaces* of professions and areas of expertise, such as accounting and the legal profession.

Carbon markets cross numerous boundaries (political, financial, professional) and have come into being in different ways in different places, often challenging existing practices. Geographers are well-positioned to identify and examine how carbon markets are bringing about change in *professional spaces* by tracking the flow of carbon as a commodity into

sometimes unexpected locations. What has been the impact of the introduction of carbon markets into the professions? Have professions themselves operated as policy entrepreneurs in the marketization of this form of pollution? In focusing on professional spaces we build on the work of Faulconbridge (2010) and others in economic and cultural geography (see for example Taylor and Thrift (2012)); concentrating on spaces of international learning and knowledge defined by professional communities of practice - groups of experts with regular interactions and shared meanings, norms and standards.

Research into the impact of climate change on organisations is extensive (see Pinkse and Kolk 2009). Much has been written about climate business strategy (carbon neutrality, pressures on businesses to respond to climate change etc.), and also new carbon-related techniques and practices (footprinting, target setting and so on). However, less attention has been directed so far at the question of how carbon as a commodity is being integrated into the professions, their rules and practices (for exceptions, focused primarily on analysing the role of carbon as a compliance instrument, see Newell and Bumpus (fc) and Okereke et al (2012)). Such issues of market practice are invisible to the public (and probably many policy makers), but have a significant influence on the fungibility of carbon, the design of the market, and its effectiveness. They deserve greater academic interest.

In this short *Boundary Crossings* essay we consider the relationship of two professions – financial accounting and law – with carbon markets, including examples of how carbon markets have manifested within the professions, but also the contribution of these professions (notably law) to the choice of markets as a policy tool. The purpose of these short examples is to illustrate interesting tensions in the ways in which carbon markets have their origins in, and are embedding within, professional spaces. We do not explore the repercussions in depth,

the intention is merely to give a flavour of how boundaries are being crossed, and the fact that some interesting things might be going on (from misunderstandings and disagreements over the definition of carbon, to emerging new alliances between professions). It is recognised that climate change has had significant impact on the science professions (see Hulme 2008), however, we deliberately focus here on two professions where the connections are less expected.

Examples of carbon market boundary crossing

Financial Accounting

Since the inception of the EU ETS in 2005, accountants have struggled to make sense of carbon, and a diversity of financial accounting practices has consequently emerged (PricewaterhouseCoopers and International Emissions Trading Association 2007; Lovell, Sales de Aguiar et al. 2010). Is an emission allowance[1] a commodity or a financial instrument? Is it an asset even if given out for free? Is it private property or a personal right? These classification questions pervade technical discussions by accountants about carbon. Individuals and organisations legitimately use emission allowances in different ways - to comply with regulation, to voluntarily offset their emissions, to trade and make profits. Yet emission allowances are also fungible entities (i.e. fully tradeable and interchangeable), at least within the carbon market in which they were created, e.g. the EU ETS. This tricky combination of the potential of emission allowances for multiple use and their fungibility (within and between different international carbon markets) makes it difficult to issue one set of guidance under a single international accounting standard.

[1] Emission allowances issued within the EU ETS are called 'European Emission Allowances', often shortened to 'EUAs': they give companies a right to emit a certain amount of greenhouse gases per year. Carbon offsets or carbon credits are another type of carbon commodity – produced from greenhouse gas reduction projects, which can then be exchanged for (used to offset) emissions made elsewhere. In this short paper we touch on issues to do with both types of carbon commodity: emission allowances and carbon offsets.

The response of the accounting profession to carbon as a commodity can be split into two stages: an initial period of reluctant engagement with carbon markets from the late 1990s to 2005, followed by a second period of more recent strategic engagement with the broader issue of climate change from 2005 onwards (Lovell and MacKenzie 2011). In the late 1990s to 2005 carbon markets first became a technical issue for accountants with the planning and early operation of emissions trading (with the EU ETS coming on stream in 2005). Guidance was issued in 2005 by international accounting standard setters (by the International Accounting Standards Board (IASB), headquartered in London, UK) for how to account for emission allowances, but just a few months later was withdrawn in response to protests from European accountants about how it misrepresented the situation (see Bebbington and Larrinaga-Gonzalez 2008; MacKenzie 2009). Discussion did therefore take place about accounting for carbon in this early period, but it was highly technical and limited to key expert accounting groups located in particular sites (the IASB in London and technical accounting advisors in Europe). There were few if any connections to broader societal debates about climate change, and accountants were not involved in the early design of carbon markets.

From 2005 onwards ('Stage Two' – see Lovell and MacKenzie 2011), however, there has been a notable shift in the depth and pace of the response of accountants to climate change issues. Professional accounting organisations have become much more engaged, and there have been deliberate attempts to position accountants as logical managers of business and climate change issues (and not only technical decision makers about how to classify emission allowances). For example, the Association of Chartered Certified Accountants (ACCA) (one of the largest international accountancy professional organisations) has since 2009 had a web-

based initiative called ‘The Carbon Jigsaw’ to provide its members with ‘appropriate tools’ and information on climate change (ACCA 2009), and have published numerous climate change research reports and briefings (see ACCA 2011).

But despite these more recent strategic overtures of the profession in response to climate change there remains a continued absence of international accounting rules for carbon. On a day-to-day practical basis accountants are therefore having to ‘muddle through’, with different companies accounting for carbon in different ways. This is a problem because company financial reports cannot directly be compared by investors and other users of financial reports (Lovell, Sales de Aguiar et al. 2010), and there is significant non-disclosure of emission allowances which are material to company accounts (Lovell et al fc). Why has the setting of detailed financial accounting standards for carbon been so complicated? Why has the issue not been resolved despite several years of carbon market operation? In part the answer relates to confusion amongst accountants about what kind of a ‘thing’ carbon is in accounting terms - a property right? a currency? a tax? This inability to define carbon precludes it from being neatly classified under one of the numerous pre-existing financial accounting standards. The protracted non-resolution also stems from the existence of distinct communities of expertise – financial accounting and carbon markets – which rarely intersect. There is hence not a clear centre of calculation (MacKenzie et al 2007), judged to be a prerequisite for successful market operation. In sum, carbon crosses a complicated array of financial accounting boundaries, and thereby makes problematic the setting of international accounting standards; it has not been an easy or straightforward process. Similar boundary crossing issues also arise in the legal profession, to which we now turn.

The legal profession

The ‘legal profession’ is a clustered concept. The archetype of the private practitioner, whether barrister or solicitor, dominates the public imagination and accounts for the bulk of the profession. Whether sole practitioners or working in a large global law firm (about which, more below), such individuals undertake most ‘lawyering’. There are also important minorities of legal professionals working in the public sector, including the cadre of ‘government lawyers’, in international organisations, in consultancies and non-governmental organisations, and in the academy. Despite their differing employment relations and ‘clients’, what they commonly share is the status of being qualified lawyers. In the field of carbon markets, each subset is of importance and the boundaries between them porous.

As far as the problematic of climate change is concerned, law has been at the heart of the international community’s response. The United Nation Framework Convention on Climate Change (UNFCCC) 1992 is a legal treaty: states that choose to ratify it (to date the UNFCCC has attracted 195 ratifications – near universal participation) agree to be bound in international law by it requirements, including its core objective of “the stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system” (Article 2, UNFCCC). The 1997 subsidiary agreement extending the Convention, the Kyoto Protocol, famously attracted narrower participation. Nonetheless, through its so-called flexibility mechanisms, it has proved to be the fountainhead of the global carbon market by way of the Clean Development Mechanism (CDM), International Emissions Trading (Articles 12 and 17 Kyoto Protocol respectively), and prompting the EU ETS.

How has the profession responded to carbon markets? Or might we better enquire of the role of the legal profession in the formation of carbon markets? According to one well placed former US government lawyer (and current law professor), the solution of marketization of greenhouse gases arrived at in Kyoto was "consciously borrowed by substantive environmental law experts who … sought analogues in the national environmental law experience [of] the United States."(Wiener 2001). Led by White House Council C Boyden Gray, US government lawyers in a variety of roles, and through expert professional spaces (private meetings, government advisory boards, and at the UNFCCC meetings), developed, applied and sold the concept of emissions trading in the international realm, drawing heavily on the success of the SOx/NOx regime in the US (Wiener 2001, Burtraw 2005) and theoretical economics. Seen in this light, the legal profession, and in particular those in the US government legal service in the 1990s, have some claim to having been present at the birth of carbon markets. Similar claims have been made for their role in the development of the EU ETS (Winter 2010). As noted, the same cannot be said for financial accountants. Rather they have been left to deal with the fallout of a scheme, the making of which they were not party to.

Shifting gears from instrument design to implementation, the legal profession has played a range of roles in the development of the carbon market. In 1999, soon after the conclusion of the Kyoto Protocol and prior to its coming into force (following Russia's ratification in 2005), the World Bank established its Prototype Carbon Fund (PCF) – a 'trail blazer' for other similar funds, it played a key role in demonstrating "many of the basic concepts" upon which the Kyoto mechanisms rest (Freestone and Streck 2005). Two of its leading alumni, Professor David Freestone (Deputy General Counsel at the World Bank, and the PCF's legal advisor) and Dr Charlotte Streck (Senior Counsel) have subsequently edited the two 'bibles'

of climate law (Freestone and Streck 2005; 2009). The latter has gone on to found the leading consultancy, Climate Focus. In a similar fashion, traditional private practitioners sought to take advantage of the new market opportunities with the global law firm, Baker & McKenzie, leading the way. Its "Climate Change and Clean Energy Practice" led in the development of the Clean Development Mechanism from 2001 onwards, playing a key role in the development of the first carbon contracts ("Emission reduction purchase agreements"), participating in the annual UNFCCC meetings and providing online tools such as the CDM Rulebook (http://cdmrulebook.org/). With the maturing of the global carbon market, other providers of legal services have emerged.

Notwithstanding their different paths, there are similarities in how accountancy and law have responded to the technical detail of carbon markets. In particular both have faced prolonged difficulties in resolving technical issues concerning the creation of carbon as a new commodity, and in particular the classification of carbon as a legal entity. There is ongoing ambiguity as to the legal definition for an emission allowance in the EU ETS (significant because the EU ETS is by far the largest international carbon market comprising 84% of global carbon market value in 2010, worth US$118.5 billion (Linacre, Kossoy et al. 2011)). Indeed, the UK Financial Markets Law Committee (FMLC) (2009) have identified the absence of a proper legal definition for EU emission allowances as a serious problem for security rights, insolvency, accounting and taxation, drawing attention to the fact that: "…the reason why these [legal] uncertainties have not so far impeded the early stages of the development of the [EU emissions trading] market is simply that they have not been appreciated." (Bank of England 2009: 15).

The journal *Carbon and Climate Law Review* neatly encapsulates the current state of play of the legal profession with regard to climate change in its Introductory Editorial:

"As climate policies evolve around the globe, attention is shifting from their conceptual design *to the challenges of implementation*. Where theoretical concerns once dominated, legal professionals are now called upon to ensure smooth operation of the regulatory framework. *No area reflects this better than the carbon market, where each transaction is subject to sophisticated contractual arrangements, liability rules, accounting practices, and other mandatory constraints*." (Carbon and Climate Law Review 2011; emphasis added).

The synergies with the response of the accounting profession to climate change are notable: in both cases it is the specialised, technical professional issues to do with carbon that have remained relatively hidden with the profession, discussed, as they are, mostly in non-public and expert spaces (national and international courts,[2] meetings with clients, IASB Board Meetings, workshops and conferences). Further, there has been little interaction between the legal and accountancy experts and those more centrally engaged with carbon markets: professional boundaries remain uncrossed to the detriment of those seeking solutions.

Conclusions

The creation of a new type of commodity throws into question deeply embedded and taken for granted assumptions about what commodities are and how they are treated, classified, and governed (Jackson 1999; Levin and Espeland 2002; Jessop 2003). The commodification of carbon to date has been characterised by efforts to make it fit (often rather awkwardly) into

[2] For example, see *Armstrong DLW GmbH v Winnington Networks Ltd* [2012] 3 All ER 425, the first judicial analysis of the nature of EU ETS allowances.

existing professional rules, regulations and practices – on trading exchanges, in financial accounts, within existing legal frameworks and so on. By undertaking detailed empirical exploration of the day-to-day effect of introducing carbon as a commodity to different places and spaces, geographers have an opportunity to put forward alternative, interdisciplinary accounts of carbon markets. With carbon markets having been around for almost a decade, now is the time to be looking in more detail at questions such as: the implications of certain types of professional expertise taking the lead in the initial 'framing' of carbon markets; tricky issues to do with carbon market implementation; and the new (and often surprising) professional spaces where the commodification of carbon has become relevant.

One outcome of the legal profession's engagement with environmental problems such as climate change has been the recognition of 'interactional expertise', defined as expertise in appreciating and understanding different disciplinary ideas and theories – as the environmental lawyer Elizabeth Fisher explains: "The development of [interactional] expertise is not just about reading the right textbook or knowing what a particular… term means – it requires understanding the complexities, ambiguities and nuances of environmental problems and discourses." (2012: 50). It is precisely this type of interdisciplinary engagement, focused on the spaces and places of carbon markets (both planned and unexpected), that we make a case for here.

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